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**REMARKS**

Upon entry of this Amendment, claims 1, 3-18, and 21-30 will be currently pending in the application. Claims 1, 3, 4, 5, 7, 8, 13, 14, 15, 16, and 17 are amended and new claims 21-29, directed to providing an interstitial element in the source and drain extension regions, are provided for the Examiner's consideration. These amendments are intended to place the claims in better condition for allowance. They do not raise new issues and do not require further search because the subject matter of the amended claims was previously examined. Therefore, the amendments should be entered into the record. Reconsideration and withdrawal of all pending objections and rejections in view of the above amendments and following remarks is respectfully requested.

***35 U.S.C. § 103 Rejection***

Claims 1-6 and 12-18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of U. S. Patent No. 6,372,590 issued to Nayak, *et al.* ("Nayak"). This rejection is respectfully traversed.

First, Applicants note that the rejections set forth in the current Office Action substantially repeat those sent forth in the Office Action of May 5, 2004. Each of these rejections was traversed the remarks set forth in Applicants' reply filed July 30, 2004. These remarks are herein incorporated by reference in their entirety and are offered in traverse of the pending rejections.

Secondly, Applicants have amended independent claim 1 to recite providing a vacancy trapping element in the source and drain extension regions, which vacancy trapping element may be selected from F, Xe, Ar, He, Kr or a noble gas element. Nayak discloses none of these

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elements. Instead, Nayak discloses only nitrogen. Because independent claim 1 is not directed to nitrogen, it is patentable over Nayak. Claims 3, -15 depend from claim 1, and are thus allowable over Nayak due to their dependencies on allowable base claim 1.

Lastly, Applicants have amended claims 16 and 17, and added new claims 21-29 dependent therefrom. Claim 16 recites in pertinent part:

ion implanting an interstitial element into the source and drain extension regions to reduce vacancy concentrations in the source and drain extensions

Paragraph [0011] of Applicant's specification explains that:

...an interstitial element creates an additional interstitial per every ion provided thereto, and the additional interstitials react with and annihilate excessive vacancies in the SiGe-based substrate. Since vacancies are .... annihilated .... by the interstitial element ...., vacancy concentration is reduced, thereby reducing diffusion of the N type impurity in the source and drain regions.

The interstitial element may be an element such as, but not limited to, Si or O. Nayak does not teach or suggest providing an interstitial element in the source and drain extension regions as claimed. Instead, Nayak teaches implanting nitrogen, a non-interstitial element. Consequently, it is respectfully submitted that claim 16 is allowable over Nayak, whether alone or in combination with the AAPA. Dependent claims 17-18 and 21-29 are also allowable over Nayak based on their dependencies from allowable base claim 16. Accordingly, allowance of claims 16-18 and 21-29 is respectfully requested.

Regarding the references Yokogawa (U.S. Patent Publication No. 2003/0227061A2) nor Fukuda (U.S. Patent Publication No. 2002/0047125A1) supplied by the Examiner in response to Applicants' challenges to official notice, Applicants note that neither of these references disclose or teach an interstitial element as recited in claim 16. Rather, Fukuda at paragraph [0037] and

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Yokogawa at paragraph [0071] only teach implanting nitrogen, a non-interstitial element, into a source or drain region. Consequently, claim 16 and associated dependent claims are further allowable over these cited references, whether alone or in combination with Nayak.

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### CONCLUSIONS

In view of the foregoing amendments and remarks, Applicants submit that all of the rejections have been overcome, and that the claims are patentably distinct from the prior art of record and in condition for allowance. The Examiner is respectfully requested to pass the above application to issue, and to contact the undersigned at the telephone number listed below, if needed. Applicant hereby makes a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to **Deposit Account No. 09-0458** (Fishkill).

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Andrew M. Calderon', with a stylized flourish at the end.

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